APPENDIX B - AIRCRAFT OPERATIONAL SURFACES

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B-1. OVERVIEW

Aircraft Operational Surfaces (AOS) include runways, taxiways, aprons, and taxilanes at airports, heliports, and seaplane bases. This appendix contains information on different types of AOS projects. Criteria in Section B-2. apply to all types of AOS projects. Criteria relevant for specific types of AOS projects are included in their own subsections of this appendix.

B-2. GENERAL ELIGIBILITY AND JUSTIFICATION

See: 49 U.S.C. §§ 47101(a)(2), 47101(a)(12), 47101(f), 47102(2), 47102(3)(A), 47102(3)(B), 47102(3)(H), 47102(3)(V), 47102(3)(X), 47102(3)(Y), 47103, 47105(c), 47105(e), 47106(a)(7), and 47114(d)(4)

See also: FAA Reauthorization Act of 2024 (P.L. 118-63), Sections 342, 702, 733, and 752

For eligibility and justification requirements applicable to all projects funded with AIP, see Chapter 2, *Eligibility & Justification*.

B-2.1. ELIGIBILITY CRITERIA

TABLE B-2.1. GENERAL ELIGIBILITY REQUIREMENTS FOR AOS PROJECTS

Item	Description
Ownership & Operator	The AOS must be available to the public (nonexclusive) and not transferred to a third-party for exclusive use.* An airport sponsor may have an entity manage an AIP-funded facility on its behalf, including a leasehold, provided it is publicly available and not for the exclusive use of that, or other, entities. An apron, taxiway, or taxilane is not considered exclusive use if it serves more than one aeronautical facility (e.g., taxilane providing access from or to a hangar complex). If an apron, taxiway or taxilane serves only one aeronautical facility, then the AOS is eligible if the facility is nonexclusive.
Location	The surface must be on airport property and depicted on the latest FAA-approved ALP.
Function	The surface must support landing and takeoff or aircraft movement to or from aeronautical facilities.
Scope	The project must be necessary to support safe aircraft operations on the airfield and meet FAA-prescribed standards.

*Examples of revenue producing facilities transferred to a third-party for exclusive use include an AIP-funded ramp to a fixed base operator (FBO) or an AIP-funded taxiway or taxilane for the use of a private operator.

B-2.2. JUSTIFICATION REQUIREMENTS

TABLE B-2.2. GENERAL JUSTIFICATION REQUIREMENTS FOR AOS PROJECTS

Item	Description
Objectives	▪ The project must achieve at least one of the congressionally directed priorities: ○ accommodate capacity; ○ achieve compliance with standards; or ○ address safety determinations; ▪ There must be an actual need, within the prescribed timeframe, for the project; and ▪ Only the elements required to obtain the full benefit of the project are included in the scope.
Activity Levels	Determined by critical aircraft with regular use on the AOS, based on Advisory Circular (AC) 150/5000-17, Critical Aircraft and Regular Use Determination.
Dimensions & Materials	Must align with standards in the applicable ACs unless a deviation is allowed. Deviations may be allowed if the project receives a modification to standards (MOS) approval. Increased dimensions must be justified separately from the AOS project or excluded, unless an exception in Table B-2.3. applies.
Useful Life	Must meet useful life thresholds (see Section B-2.2.2.).

65 **TABLE B-2.3. SPECIFIC JUSTIFICATION EXCEPTIONS FOR AOS PROJECTS**

Exception	Description
Military Use	The FAA may not require reduced runway, taxiway, or apron dimensions when the surface is public-use and directly supports a base of the U.S. Air Force (USAF) or the Air National Guard (ANG), regardless of whether military aircraft are stationed at the airfield.
Alaska Runways	Reconstruction, rehabilitation, and maintenance for runway projects are eligible without dimension justification. Expansion is allowed if supporting critical health needs of a community, remote fuel deliveries, and firefighting response. Justification is still required for expansion projects.
Future Use Commitments	New construction of certain runway and taxiway development may be justified with credible written commitments from civil users that commit to begin operations within 5 years of project justification. Commitments must specify aircraft type, number of operations, and commitment exclusivity.
Alaska Lease Lots	Per Section 733(b) of the FAA Reauthorization Act of 2024 (P.L. 118-63), an Alaska sponsor may perform basic lease lot site preparatory work in conjunction with a concurrent AIP-eligible development project if: ▪ The proposed lease lot work is in the direct vicinity of the AIP-funded project;

Exception	Description
	▪ The sponsor demonstrates that the lease lot is necessary to accommodate aeronautical need and will directly benefit airport operations, safety, or capacity; and ▪ The sponsor addresses the specific issues related to lack of building materials and / or the unreasonable costs of procuring, transporting, and placing the materials. The portion of AIP funds allocated to the lease lot expansion must be proportional to the cost of its role in supporting the concurrent AIP project, as determined by the ARP Field Office.

66 ### B-2.2.1. SCOPE & ALLOWABLE COSTS

67 Projects must align with the actual operational needs of the airport and not exceed the scope or
68 quantities identified. The project's scope must contain only the elements that are required to obtain the
69 full benefit of the project.

70 The following costs may be eligible as part of an AOS project when the ARP Field Office confirms the
71 project's scope can be justified:

72 **TABLE B-2.4. GENERAL SCOPE OF WORK – ALLOWABLE COSTS**

Cost	Project Scope Is Allowable If
Exceeding Justified Dimensions / Specifications	An airport may construct, reconstruct, expand, extend, strengthen, shift or realign an AOS to dimensions and specifications exceeding justification provided additional costs: ▪ Are excluded from the Federally funded portion of the eligible project, or ▪ May be funded with AIP if the project meets the exception criteria in Table B-2.3.
Pavement Removal	Justification for the removal of pavement exceeding dimensions can be included under an eligible AOS project only when it involves a safety deficiency determination or correcting non-standard geometry. Examples include fulfilling safety grading requirements or maintaining wing-tip clearance separations for the critical aircraft in accordance with FAA prescribed standards. Including pavement removal in a project scope requires ARP Field Office concurrence.
Pavement in Front of Eligible Buildings	Apron, taxiway, or taxilane pavement in front of nonexclusive use aeronautical facilities is eligible. For any other facilities, the 50 feet of apron, taxilane, or taxiway pavement in front of the facility is considered part of the building. The ARP Field Office may reduce the 50-foot requirement for an eligible AOS project under 49 U.S.C. § 47110(b)(1)(A), but only when design standard constraints exist.

73 ### B-2.2.2. USEFUL LIFE

Chapter 2 discusses minimum useful life requirements applicable to all AIP-funded projects. One component of the minimum useful life requirement for a facility being reconstructed is that the facility must no longer be operational or maintainable, while rehabilitation must extend the useful life. Chapter 2, Section 2-3.2., Minimum Useful Life, provides details on what factors the ARP Field Office must evaluate if the facility has not achieved its minimum useful life.

Table B-2.5. includes specific minimum useful life requirements applicable to all eligible AOS projects after new construction. Useful life begins on the date that the first AOS construction grant is executed for the initial construction effort. The useful life thresholds apply regardless of Pavement Condition Index (PCI) or engineering analysis. However, the PCI may be used to help determine the appropriate level of effort. A PCI below 70 (fair) is an indication for rehabilitation, and a PCI below 55 (poor) is an indication for reconstruction.

TABLE B-2.5. MINIMUM USEFUL LIFE REQUIREMENTS FOR AOS PROJECTS

Surface Type / Activity	Reconstruction	Rehabilitation	Routine Work
Hard Surfaces (asphalt, concrete, or waterway)	20 years	10 years	3 years
Non-Paved Surfaces (gravel or turf)	10 years	5 years	1 year
Runway Grooving / Porous Friction Course	10 years	Not Eligible	Not Eligible

B-2.2.2.1. RELEVANT GUIDANCE FOR ALL AOS PROJECTS

For prerequisites applicable to all projects funded with AIP, see Chapter 3, *Prerequisites*.

Relevant ACs and Orders include, but are not limited to, the current version of:

- FAA Order 5090.5, Formulation of the National Plan of Integrated Airport Systems (NPIAS) and the Airports Capital Improvement Plan (ACIP);
- FAA Order 5300.1, Modifications to Agency Airport Design, Construction, and Equipment Standards;
- FAA JO 7110.65, Air Traffic Control;
- AC 150/5000-17, Critical Aircraft and Regular Use Determination;
- AC 150/5060-5, Airport Capacity and Delay;
- AC 150/5100-13, Development of State Aviation Standards for Airport Pavement Construction;
- AC 150/5200-30, Airport Field Condition Assessments and Winter Operations Safety;
- AC 150/5300-13, Airport Design;
- AC 150/5320-6, Airport Pavement Design and Evaluation;
- AC 150/5325-4, Runway Length Requirements for Airport Design;
- AC 150/5390-2, Heliport Design;
- AC 150/5395-1, Seaplane Bases; and

- Engineering Brief No. 105, Vertiport Design, Supplemental Guidance to Advisory Circular 150/5390-2D, Heliport Design.

See the AC checklist for a list of the latest version of ACs applicable to AIP-funded projects.

B-2.2.2.2. EXCLUDED WORK FOR ALL AOS PROJECTS

Excluded work and costs are not eligible. The following costs are not eligible as part of an AOS project:

- Certain projects at unclassified airports (see Chapter 2);
- Third-party instrument flight procedures (see Chapter 2);
- AOS within 50 feet in front of ineligible buildings. The ARP Field Office may reduce the 50-foot requirement for an eligible AOS project under 49 U.S.C. § 47110(b)(1)(A), but only when design standard constraints exist;
- Routine work at Large, Medium, and Small hub airports;
- Upkeep (e.g., applying herbicide, mowing, sweeping, and repairing damages);
- Re-installing, replacing, or reconstructing fueling infrastructure or lighting that does not impede a project or can be protected in place, reused, or reinstalled;
- Any level of effort not necessary for the AOS's purpose (e.g., fire hydrants or catchment systems); and
- Airport surface detection systems.

B-2.2.2.3. STATE HIGHWAY STANDARDS FOR CERTAIN AOS PROJECTS

State highway standards for AOS pavement projects may be used provided all of the following are met:

- The AOS project must be at a nonprimary airport serving aircraft that do not exceed 60,000 pounds gross weight;
- The state highway standards must be for the state in which the airport is located;
- MOS have been approved by the FAA;
  - The FAA determines safety will not be negatively impacted; and
- Current aircraft operations do not expect changes to the critical aircraft that would require the AOS pavement to support more than 60,000 pounds gross weight during the project's useful life.

Funding for AOS projects at airports eligible to use state highway standards is limited as follows:

- Nonprimary, noncommercial service airports may only use general aviation apportionments (sometimes referred to as entitlements) and state apportionments, or
- Nonprimary commercial service airports may only use nonprimary commercial service apportionments.

The life of the pavement, with necessary maintenance and upkeep, must not be shorter than it would be if constructed using FAA standards with a useful life expectancy of 20 years.

B-3. ELIGIBLE RUNWAY PROJECTS (INCLUDING SEA LANES AND HELIPADS)

B-3.1. OVERVIEW

For the purposes of this appendix, a runway is an area of land or water used or intended for the landing and taking off of aircraft. This includes land-based runways, sea lanes, and helipads. Runways may be asphalt, concrete, turf, gravel, or water.

TABLE B-3.1. RUNWAYS

Runway	Description
Primary	The primary area for the landing and taking off of aircraft.
Crosswind	Provides additional access to an airport when all weather coverage on the primary runway is less than 95 percent for the regular use of critical aircraft.
Capacity	Provides additional efficient access to an airport for operational throughput capacity purposes; may or may not be parallel to the primary runway.
Secondary	Meets the need for a specific operational purpose, such as a non-paved operating surface or noise abatement. Only applicable in rare situations and requires coordination with the ARP Field Office and ARP Headquarters.
Additional	A runway other than the primary that does not meet the requirements to serve as a capacity or crosswind runway.

A primary runway may be shifted or realigned to meet standards or to address a documented safety finding or determination. In such cases, the newly constructed, realigned, or shifted runway may be designated as the primary runway, and the original surface may be decommissioned as a runway, if the original pavement is not removed due to a safety deficiency determination or correcting non-standard geometry, unless a capacity or crosswind runway with existing dimensions is justified to remain in place.

When an airport has a helipad and/or a sea lane in addition to its primary land-based runway, the helipad and/or sea lane may be eligible but cannot be declared or considered a primary AOS.

TABLE B-3.2. OPTIONAL RUNWAY PROJECT ELEMENTS

Element	Description
In-pavement Centerline Lighting	May be included when the ARP Field Office determines in-pavement centerline lighting is eligible and justified for the runway (see Appendix F, Lighting, Signage & Markings). Cannot be included as part of a routine work project.
Temporary Designation of Taxiway as a Runway	Eligible when the ARP Field Office determines the temporary runway is necessary to maintain critical access during a major runway project. The ARP Field Office must coordinate with other impacted lines of business. The FAA Flight Procedures Office will only develop temporary procedures when the project duration is more than one year. If a project duration is less than one year, the sponsor may implement temporary procedures by a third-party provider at their own expense.

150 ## B-3.2. ELIGIBILITY AND JUSTIFICATION

151 **TABLE B-3.3. RUNWAY ELIGIBILITY AND JUSTIFICATION**

Runway Type	Eligible	Justification
Primary	Yes	Every airport has only one primary runway.
Crosswind	Yes	For the first crosswind, the all-weather wind coverage on the primary runway is less than 95%, and there is regular use by the runway design code (RDC) of aircraft needing wind coverage. A second crosswind runway may be justified when the first crosswind runway exceeds 60% of its annual service volume (ASV) during crosswind operating conditions or when ARP Headquarters determines an operational need.
Legacy Crosswind	Yes	An exception in 49 U.S.C. § 47102 allows rehabilitation or reconstruction on a legacy crosswind runway that is reflected on the latest approved ALP (and has received prior AIP funding) when the primary runway has sufficient wind coverage, and / or the legacy crosswind runway lacks regular use. The RDC for the legacy crosswind runway is AI / BI small. A legacy crosswind runway is not justified if there is an existing crosswind runway that is needed for wind coverage.
Capacity	Yes	This runway is not needed for crosswind coverage. Operations demand on the primary runway exceeds 60% of its ASV. Multiple capacity runways are justified when combined operations on an airport's existing primary and capacity runways exceed 60% of the aggregate, combined ASV.
Secondary	Yes	The ARP Field Office, in coordination with ARP Headquarters, determines there is a specific operational need for the runway with substantiated regular use that has a gravel, turf, or water runway surface, and / or as a preferred noise abatement runway in a 14 CFR Part 150 approved Noise Compatibility Plan. ARP Headquarters determines there is a specific operational need for the runway with substantiated regular use (e.g., efficient separation of fast and slow aircraft operations).
Additional Runway	No	An additional runway is any runway that **does not** meet the criteria for primary, crosswind, legacy crosswind, capacity, or secondary types. AIP funds **cannot** be used for projects on additional runways. Backup runways are categorized as additional runways.

152 For scope of work requirements applicable to all AIP-funded projects, see Chapter 2. For scope of work 153 requirements applicable to AOS projects, see Section B-2.2.1.

154 **TABLE B-3.4. ELIGIBLE RUNWAY PROJECTS**

Project Type	Justification	Additional Requirements and Considerations	Excluded Work
Construct Runway ***Unit of Measure:*** *Length and Width in Feet*	A new runway (primary, crosswind, capacity, or secondary) to meet a justified capacity or operational need.	Projects include full foundational construction (subgrade, subbase, drainage if applicable, bases, surface); signage and markings; lighting (if justified); shoulders and blast pads if required. For sea lanes runways, full-depth dredging; contouring and reshaping shorelines; removing underwater obstructions; adding non-revenue producing docks or piers; constructing new turning basins. Both design and as-built aeronautical surveys are required, unless runway approaches remain visual and departure procedures are not authorized "NA".	Unmarked sea lanes that cannot be protected under 14 CFR Part 77.
Extend / Expand Runway ***Unit of Measure:*** *Length and Width in Feet*	Increased runway (primary, crosswind, capacity, or secondary) in length and / or width to meet aircraft payload needs and / or increase operational throughput capacity.	Projects include new construction; partial reuse of existing pavement; reconstruct or rehabilitate existing pavement as needed; drainage; lighting (if justified); signage and markings; shoulders and blast pads if required. For sea lanes, dredging to establish new alignment; shoreline contouring; removing underwater obstructions; regrading existing areas; adding non-revenue docks or piers; constructing new turn basins. Both design and as-built aeronautical surveys are	Unmarked sea lanes that cannot be protected under 14 CFR Part 77.

Project Type	Justification	Additional Requirements and Considerations	Excluded Work
		required, unless runway approaches remain visual and departure procedures are not authorized "NA".	
Strengthen Runway ***Unit of Measure:*** *Length and Width in Feet*	Increased pavement strength is needed for heavier critical aircraft or increased use.	Projects include layering; soil stabilization; subsurface mitigation; rehabilitation or reconstruction of adjacent AOS; lighting (if justified); shoulders and blast pads if required. May include adding pavement thickness. An aeronautical survey may be required if the threshold exceeds the elevation threshold. If an aeronautical survey is required, it must include both design and as-built surveys, unless runway approaches remain visual and departure procedures are not authorized "NA".	Turf, gravel, or sea lanes.
Shift Runway ***Unit of Measure:*** *Shift in Feet*	Moves a runway laterally to meet a safety, capacity, or an operational need. If more than 30% of a shifted runway consists of new pavement, the useful life restarts.	Projects include total pavement structure; partial reuse of existing pavement; reconstruct or rehabilitate existing pavement as needed; drainage; lighting (if justified); signage and markings. Shoulders and blast pads if required. May require new runway designators if the shift changes the runway's orientation. May include removal of pavement (see Table B-2.4.). A sea lane may include full depth dredging; contouring of adjacent shorelines;	Unmarked sea lanes that cannot be protected under 14 CFR Part 77.

Project Type	Justification	Additional Requirements and Considerations	Excluded Work
		removing obstructions at and below the surface inhibiting the AOS areas. Both design and as-built aeronautical surveys are required, unless runway approaches remain visual and departure procedures are not authorized "NA".	
Realign Runway ***Unit of Measure:*** *Degrees of Realignment*	Rotates a runway's orientation to satisfy a documented safety deficiency or recommendation or meet a capacity or operational need. If more than 30% of a realigned runway consists of new pavement, the useful life restarts.	Projects include new foundational construction; partial reconstruction or rehabilitation; removal of old pavement; drainage; lighting (if justified); signage and markings. Shoulders and blast pads if required. May include removal of pavement (see Table B-2.4.). Requires new runway designators. A sea lane may include full depth dredging; contouring of adjacent shorelines; removing obstructions at and below the surface inhibiting the AOS areas. Both design and as-built aeronautical surveys are required, unless runway approaches remain visual and departure procedures are not authorized "NA".	Unmarked sea lanes that cannot be protected under 14 CFR Part 77.
Reconstruct Runway ***Unit of Measure:*** *Length in Feet*	Needed to restore a runway's full structural and operational functionality. If more than 30% of a runway is	Projects include full-depth replacement; subgrade or base reconstruction; shoulders if required; drainage; lighting, signage and marking replacement. Shoulders and blast pads if required.	Unmarked sea lanes that cannot be protected under 14 CFR Part 77.

Project Type	Justification	Additional Requirements and Considerations	Excluded Work
	reconstructed, the useful life restarts. Full reconstruction of the primary runway only can be conducted at its existing length if it is within 120% of the runway length needed by the critical aircraft unless an exception in Table B-2.3. is applicable.	May include removing the existing pavement down to the subgrade, replacing the base, and then repaving. May also include replacing concrete panels for the full length of the runway. Runway lighting may be replaced if the existing lighting system cannot be protected in place or reused. For gravel or turf runways, the project may include full structural regrading of the landing surface. For sea lanes, may include turning basins, replacing identification markers, barriers, and buoys, full depth dredging, and related infrastructure to support operations on water. Adjacent shoreline contouring. An aeronautical survey may be required if the threshold exceeds the elevation threshold. If an aeronautical survey is required, it must include both design and as-built surveys, unless runway approaches remain visual and departure procedures are not authorized "NA".	
Rehabilitate Runway ***Unit of Measure:*** *Length in Feet or Number of Panels*	Needed to extend the useful life of a runway when the structure remains functional. Rehabilitation is appropriate if less than 30% of a runway	Projects include milling and overlays, white topping, and select concrete panels or section replacements of all or a portion of the runway when the existing runway base structure is still sound.	Unmarked sea lanes that cannot be protected under 14 CFR Part 77.

Project Type	Justification	Additional Requirements and Considerations	Excluded Work
	requires full depth or panel replacement. For sea lanes, rehabilitation is appropriate if less than 30% of the existing sea lane structure requires replacement or restoration. Full rehabilitation of the primary runway only can be conducted at its existing length if within 120% of the runway length needed by the critical aircraft unless an exception in Table B-2.3. is applicable.	Shoulders and blast pads if required. For gravel or turf runways, the project may include surface regrading such as reseeding, adding gravel (not full replacement), etc. For sea lanes, scope may include turning basins, dredging, refurbishing or clearing sea lanes and turning basins, replacing markers, barriers, and buoys. An aeronautical survey may be required if the threshold exceeds the elevation threshold. If an aeronautical survey is required, it must include both design and as-built surveys, unless runway approaches remain visual and departure procedures are not authorized "NA".	
Runway Routine Work (Reseal or Surface Treat) ***Unit of Measure:*** *Length in Feet*	Needed to preserve the useful life of a runway at a Nonhub or nonprimary airport. **Alaska Only:** Crack sealing can be conducted annually at Part 139 certificated airports in Alaska if approved by the ARP Field Office.	Projects include the cleaning, filling, and sealing of longitudinal and transverse cracks on a periodic basis. For paved runways, may include crack repairs, joint filling and sealing, or seal coats. For gravel or turf runways, may include dust suppressant treatments for existing gravel runways and filling and resurfacing holes or other divots on turf surfaces. For sea lanes, may include relocating select	Projects at Large, Medium, or Small hub airports. In-pavement centerline lighting. Not applicable to seaplane docks or piers.

Project Type	Justification	Additional Requirements and Considerations	Excluded Work
		identification markers, barriers, or buoys to proper positions, cleaning shorelines adjacent to the existing AOS, and surface debris removal.	
Install or Replace Runway Grooving / Porous Friction Course ***Unit of Measure:*** *Treatment Type*	Needed to satisfy a documented safety deficiency or recommendation on a designated paved primary or capacity runway. Projects at non-commercial service airports require documented climatic conditions and turbofan, turbojet, and turboprop traffic. Initial installation can be a stand-alone project or can be included as part of a project on the runway. Replacement of runway grooving / porous friction course eligible after 10 years and no longer functional.	Projects include cutting or forming grooves; friction course application intended to aid the stopping of jets on contaminated runways.	Runways not serving jet traffic. Not applicable to gravel, turf, and sea lanes. Aeronautical survey.
Runway Surface Condition Sensors (As Part of an Eligible Runway Project)	Needed to collect and report data impacting runway use on a designated paved primary or capacity runway. Projects at non-commercial service airports require documented climatic	Projects include acquisition and installation of in-pavement sensors intended to enhance safety by monitoring surface conditions and transmit data indicating the timing of chemical applications and other treatments. Data must be owned, operated, and transmitted	Data transmission systems. Stand-alone projects. Not applicable to sea lanes. Aeronautical survey.

Project Type	Justification	Additional Requirements and Considerations	Excluded Work
	conditions and jet traffic. The useful life of the runway project includes the sensors.	directly to airport operators for primary use, but may be shared with airport users as needed.	

B-4. ELIGIBLE TAXIWAY PROJECTS (INCLUDING TAXI CHANNELS)

B-4.1. OVERVIEW

For the purposes of this appendix, a taxiway is an appurtenant area used for aircraft movement between AOS surfaces. Taxiways may be asphalt, concrete, turf, gravel, or water. There are several different types of taxiways and taxiway-related infrastructure, such as parallel taxiways, entrance taxiways, bypass taxiways, exit or high speed taxiways, crossover, connector, or transverse taxiways, holding bays, turnaround taxiways, apron taxiways, end around taxiways, taxi channels, and runways converted into taxiways. Taxiways are defined and described in AC 150/5300-13, Airport Design.

TABLE B-4.1. OPTIONAL TAXIWAY PROJECT ELEMENTS

Element	Description
In-Pavement Centerline Lighting	May be included when the FAA Field Office determines in-pavement centerline lighting is eligible and justified for the taxiway (see Appendix F, Lighting, Signage & Markings). Cannot be included as part of a routine work project.

B-4.2. ELIGIBILITY AND JUSTIFICATION

Taxiway projects follow the general eligibility and justification requirements detailed in Section B-2.

TABLE B-4.2. ELIGIBLE TAXIWAY PROJECTS

Project Type	Justification	Additional Requirements and Considerations	Excluded Work
Construct Taxiway ***Unit of Measure:*** *Length and Width in Feet*	A new taxiway to meet a justified safety, capacity, or operational need. Construct high speed exit(s) to achieve an average runway	Projects include full foundational construction (subgrade, subbase, drainage if applicable, bases, surface); shoulders if required; signage and marking; lighting (if justified); shoulders if required.	

Project Type	Justification	Additional Requirements and Considerations	Excluded Work
	occupancy time per FAA JO 7110.65.	Must connect to an eligible AOS. May include a new holding bay. Run-up apron areas can be co-located with holding bays with the appropriate safety measures. For seaplane taxi channels, full depth dredging; contouring and reshaping shorelines; removing underwater obstructions; constructing new turning basins.	
Extend / Expand Taxiway ***Unit of Measure:*** *Length and Width in Feet*	Increased taxiway length and / or width to meet operational needs.	Projects include new pavement; reconstruction or rehabilitation of existing pavement as needed; lighting (if justified), signage and markings; shoulders if required. May include continuing an existing taxiway to reach another runway-taxiway connector, extending a partial parallel taxiway to a runway threshold, extending a partial parallel taxiway to an apron, as well as expanding the existing taxiway and adding a new holding bay or expanding an existing holding bay. For seaplane taxi channels, dredging to establish new alignment; shoreline contouring; removing underwater obstructions; regrading existing areas; adding non-revenue docks or piers.	

Project Type	Justification	Additional Requirements and Considerations	Excluded Work
Strengthen Taxiway ***Unit of Measure:*** *Length and Width in Feet*	Increased pavement strength is needed for heavier critical aircraft or increased use.	Projects include layering; soil stabilization; subsurface mitigation; rehabilitation or reconstruction of the existing AOS; shoulders if required.	Not applicable to turf, gravel, or waterway taxiways.
Shift Taxiway ***Unit of Measure:*** *Shift in Feet*	Moves a taxiway laterally to meet safety, standards, capacity, or operational needs. If more than 30% of a shifted taxiway consists of new pavement, the useful life restarts. Shift location of a high speed exit(s) to achieve an average runway occupancy time per FAA JO 7110.65.	Projects include total pavement structure; partial reuse of existing pavement; reconstruct or rehabilitate existing pavement as needed; lighting (if justified); signage and markings. Shoulders if required. May include removal of pavement (see Table B-2.4.). For seaplane taxi channels, may include full depth dredging; contouring of adjacent shorelines; removing obstructions at and below the surface inhibiting the AOS areas; relocation of existing non-revenue producing structures.	If relocating a taxiway, the existing taxiway cannot be retained.
Realign Taxiway ***Unit of Measure:*** *Degrees of Realignment*	Rotates taxiway orientation to correct geometry, satisfy a documented safety deficiency or recommendation, address capacity, or meet operational need. If more than 30% of a realigned taxiway consists of new pavement, the useful life restarts. Realign location of a high speed exit(s) to	Projects include new foundational construction; partial reconstruction or rehabilitation; lighting (if justified); signage and markings; shoulders if required. May include removal of pavement (see Table B-2.4.). For seaplane taxi channels, may include full depth dredging; contouring of adjacent shorelines; removing obstructions at and below the surface inhibiting the AOS areas;	

Project Type	Justification	Additional Requirements and Considerations	Excluded Work
	achieve an average runway occupancy time per FAA JO 7110.65.	relocation of existing non-revenue producing structures.	
Reconstruct Taxiway ***Unit of Measure:*** *Length in Feet*	Needed to restore a taxiway's full structural and operational functionality. If more than 30% of a reconstructed taxiway requires full depth replacement, the useful life restarts.	Projects include full depth replacement; subgrade or base reconstruction; drainage; signage and marking replacement. Shoulders if required. May include removing the existing taxiway down to the subgrade, replacing the base, and then repaving. May include replacing concrete panels for the full length of the taxiway. Taxiway lighting may be replaced if the existing lighting system cannot be protected in place or reused. For seaplane taxi channels, may include taxi channels or lanes, replacing identification markers, barriers, and buoys, full depth dredging, and related infrastructure to support operations on water. Adjacent shoreline contouring.	
Rehabilitate Taxiway ***Unit of Measure:*** *Length in Feet or Number of Panels*	Needed to extend the useful life of a taxiway when the structure remains functional. Rehabilitation is appropriate if less than 30% of a taxiway requires full depth or panel replacement.	Projects include milling and overlays, partial depth repairs, surface treatments, lighting upgrades. Shoulders if required. For seaplane taxi channels, full or partial dredging of the existing sea channel, rehabilitating or restoring select identification markers,	

Project Type	Justification	Additional Requirements and Considerations	Excluded Work
	For seaplane taxi channels, rehabilitation is appropriate if less than 30% of the existing taxi channel structure requires replacement or restoration.	barriers, and buoys, limited contouring of shorelines adjacent to the existing sea channel, and removing all surface hazards.	
Taxiway Routine Work (Reseal or Surface Treat) ***Unit of Measure:*** *Length in Feet*	Needed to preserve the useful life of a taxiway at a Nonhub or nonprimary airport.	Project includes the cleaning, filling, and sealing of longitudinal and transverse cracks on a periodic basis. For paved taxiways, may include crack repairs, joint filling and sealing, or seal coats. For gravel or turf taxiways, may include dust suppressant treatments for existing gravel taxiways and filling and resurfacing holes or other divots on turf surfaces.	Projects at Large, Medium, or Small hub airports. In-pavement centerline lighting. Seaplane taxi channels.

B-5. APRONS (INCLUDING RAMPS, PADS, AND DOCKS)

B-5.1. OVERVIEW

For the purposes of this appendix, an apron is an appurtenant area designated for nonexclusive, public-use aeronautical purposes, including aircraft parking, passenger and cargo loading and unloading, fueling, maintenance, run-ups, seaplane docking, and anchorage. Aprons may be asphalt, concrete, turf, gravel, or water. There are several different types of aprons and apron-related infrastructure, such as hangar aprons, general aviation aprons, passenger terminal aprons, cargo aprons, maintenance aprons, remote or remain overnight aprons, run up aprons, helicopter parking positions, seaplane anchorages, seaplane docks, seaplane ramps, fueling aprons, and deicing aprons. Aprons are defined and described in AC 150/5300-13, Airport Design.

In limited circumstances, the costs associated with the following may be included as part of an eligible apron project.

TABLE B-5.1. OPTIONAL APRON PROJECT ELEMENTS

Element	Description
Fuel Farm Utility Lines and Associated Infrastructure	May be included when: ▪ It is the initial installation of fuel farm lines and associated infrastructure supporting a sponsor-owned fuel farm under an apron; ▪ The majority of the apron serves a purpose other than the fuel farm; ▪ There are no alternative locations for installing the fueling related infrastructure; and ▪ Only the portions of the fueling related infrastructure under the apron are included in the project.
Aircraft Fueling Facilities	The necessary costs associated with aircraft fueling facilities adjacent to a terminal apron (these are not fuel farms) under the terminal apron.
Aircraft Fuel Lines and Pits	The incidental cost of installing aircraft fuel lines and pits as part of an aircraft apron project is an allowable cost. The costs must be prorated to include only the portion of the lines and pits physically under the AIP-funded apron project. The requirements for including ineligible or non-AIP funded work in the contract outlined in Chapter 3, Section 3-6.2.4. must be met.
Compass Calibration	An area dedicated to compass calibration activities with appropriate materials (non-magnetic), signage, and markings. If the apron's primary purpose is for compass calibration, see Appendix G, NAVAIDs.

B-5.2. ELIGIBILITY AND JUSTIFICATION

Apron projects follow the general eligibility and justification requirements detailed in Section B-2.

TABLE B-5.2. ELIGIBLE APRON PROJECTS

Project Type	Justification	Additional Requirements and Considerations	Excluded Work
Construct Apron ***Unit of Measure:*** *Square Yards*	A new apron is needed to meet a capacity or standards need.	Projects include full foundational construction (subgrade, subbase, base, surface); required markings; lighting (edge or flood lighting); tiedown areas; drainage. A new access ramp or apron for a seaplane base.	
Expand Apron ***Unit of Measure:*** *Square Yards*	Increased apron area is needed to meet operational needs.	Projects include constructing new pavement; reconstructing or rehabilitating existing	

Project Type	Justification	Additional Requirements and Considerations	Excluded Work
		pavement as needed to tie in; expand aircraft parking or maneuvering areas. Expand an existing apron or access ramp at a seaplane base by adding to the number of existing docks or anchorages and adding gangways to support additional areas.	
Strengthen Apron ***Unit of Measure:*** *Square Yards*	Increase pavement strength for heavier critical aircraft or increased use. Asphalt / concrete only.	Projects include layering; soil stabilization; subsurface mitigation; rehabilitation or reconstruction of existing apron.	
Reconstruct Apron ***Unit of Measure:*** *Square Yards*	Needed to restore an apron's full structural and operational functionality. If more than 30% of a reconstructed apron requires full depth replacement, the useful life restarts.	Projects include full depth replacement; subgrade or base reconstruction; drainage; markings replacement. Reconstruct access ramp(s) or docks at a seaplane base, which may include adjacent shoreline contouring.	
Rehabilitate Apron ***Unit of Measure:*** *Square Yards*	Needed to extend the useful life of an apron when the structure remains functional. Rehabilitation is appropriate if less than 30% of an apron requires full depth or panel replacement. For seaplane base access ramps or aprons, rehabilitation is appropriate if less than 30% of the existing structure	Projects include mill and overlay; white topping; select panel or section replacements; partial depth repairs; markings. Rehabilitate an existing access ramp or apron for a seaplane base. Completing work necessary to replace or restore decking, floats, anchors, or brackets comprising up to 30% of the existing structure. Limited contouring of adjacent shorelines.	

Project Type	Justification	Additional Requirements and Considerations	Excluded Work
	requires replacement or restoration.		
Routine Apron Work (Reseal or Surface Treat) ***Unit of Measure:*** *Square Yards*	Needed to preserve the useful life of an apron at a Nonhub or nonprimary airport.	Projects include cleaning, filling, and sealing of longitudinal and transverse cracks on a periodic basis. For paved aprons, may include crack repairs, joint filling and sealing, or seal coats. For gravel or turf aprons, may include dust suppressant treatments for existing gravel aprons and filling and resurfacing holes or other divots on turf surfaces.	Projects at Large, Medium, or Small hub airports. Not applicable to access ramps or aprons at seaplane bases.

B-6. TAXILANES

B-6.1. OVERVIEW

For the purposes of this appendix, a taxilane provides a path for aircraft to access taxiways and aprons from areas that are nonexclusive, public-use. Taxilanes may be asphalt, concrete, turf, gravel, or water. There are several different types of taxilanes, such as hangar taxilanes, apron taxilanes, and multi-use taxilanes. Taxilanes are defined and described in AC 150/5300-13, Airport Design.

B-6.2. ELIGIBILITY AND JUSTIFICATION

Taxilane projects follow the general eligibility and justification requirements detailed in Section B-2 when not associated with the construction of a new eligible building.

Costs associated with the construction of a new taxilane, when constructing a new eligible building, must follow the building funding rules when the taxilane is necessary to achieve the full benefit of the building. See Appendix L, Revenue Producing, for additional information when constructing a new hangar building. Costs associated with routine work, rehabilitation, and reconstruction of a taxilane associated with an eligible building or with more than one aeronautical facility follow AOS funding rules detailed in Section B-2.

Costs associated with strengthening, shifting, or realigning a taxilane must be justified through another eligible project.

No costs associated with taxilane projects outside these categories may be justified.

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Project Type	Eligibility	Additional Requirements and Considerations	Excluded Work
Construct Taxilane ***Unit of Measure:*** *Length and Width in Feet*	A new taxilane is needed to meet a safety, capacity, or standards need.	Projects include full foundational construction (subgrade, subbase, drainage if applicable, base, surface); shoulders if required; required markings and signage; drainage. For seaplane bases, full depth dredging; contouring or reshaping shorelines; removing underwater obstructions.	Lighting.
Extend / Expand Taxilane ***Unit of Measure:*** *Length and Width in Feet*	Increased taxilane length and / or width is needed to meet current standards.	Projects include construction of new pavement; reconstruction or rehabilitation of existing pavement as needed to tie in; markings. For seaplane bases, dredging to establish new alignment; shoreline contouring; removing underwater obstructions; regrading existing areas.	
Strengthen Taxilane ***Unit of Measure:*** *Length and Width in Feet*	Increased pavement strength if needed for heavier critical aircraft or increased use.	Projects include layering, soil stabilization, and subsurface mitigation.	
Shift Taxilane ***Unit of Measure:*** *Length and Width in Feet*	Move the taxilane laterally when the taxilane impedes another eligible project (funded under that project's overall development objective) or when required to meet separation standards	Projects may include total pavement structure; partial reuse of existing pavement. May include removal of pavement (see Table B-2.4.). For seaplane bases, may include full depth dredging; contouring of adjacent shorelines; removing obstructions at and below	

Project Type	Eligibility	Additional Requirements and Considerations	Excluded Work
	based on regular use of the critical aircraft. If more than 30% of a shifted taxilane consists of new pavement, the useful life restarts.	the surface inhibiting the AOS areas; relocation of existing non-revenue producing structures.	
Realign Taxilane ***Unit of Measure:*** *Degrees of Realignment*	Reconfigure or rotate the taxilane alignment because the taxilane impedes another eligible project (funded under that project's overall development objective) or to meet separation standards based on regular use of the critical aircraft. If more than 30% of a realigned taxilane consists of new pavement, the useful life restarts.	Projects include new foundational construction; partial reconstruction / rehab; removal of old pavement. May include removal of pavement (see Table B-2.4.). For seaplane bases, may include full depth dredging; contouring of adjacent shorelines; removing obstructions at and below the surface inhibiting the AOS areas; relocation of existing non-revenue producing structures.	
Reconstruct Taxilane ***Unit of Measure:*** *Length and Width in Feet*	Restore a taxilane's full structural and operational functionality. If more than 30% of a reconstructed taxilane requires full depth replacement, the useful life restarts.	Full depth replacement; subgrade or base reconstruction; shoulders if required; paving; drainage; markings replacement. If there is existing lighting, not funded by AIP, that cannot be protected or reused, the lighting may be reconstructed using primary or nonprimary entitlements and / or state apportionment funding. Costs to reinstall lighting may be funded using primary or nonprimary entitlements and / or state apportionment funding.	

Project Type	Eligibility	Additional Requirements and Considerations	Excluded Work
		For seaplane bases, full depth dredging; contouring / reshaping shorelines; removing underwater obstructions.	
Rehabilitate Taxilane ***Unit of Measure:*** *Length in Feet or Number of Panels*	Needed to extend the useful life of a taxilane when the structure remains functional. Rehabilitation is appropriate if less than 30% of a taxilane requires full depth or panel replacement. For seaplane bases, rehabilitation is appropriate if less than 30% of existing channel structure requires replacement or restoration.	Projects include milling and overlays, white topping, and select concrete panels or section replacements on all or a part of the taxilane when the existing taxilane base structure is still sound. For seaplane bases, scope may include dredging, refurbishing, or clearing the existing sea channel and replacing markers, barriers, and buoys.	
Taxilane Routine Work (Reseal or Surface Treat) ***Unit of Measure:*** *Length in Feet*	Needed to preserve the useful life of a taxilane at a Nonhub or nonprimary airport.	Routine work is the cleaning, filling, and sealing of longitudinal and transverse cracks on a periodic basis. For paved taxilanes, may include crack repairs, joint filling and sealing, or seal coats. For gravel or turf taxilanes, may include dust suppressant treatments for existing gravel taxilanes and filling and resurfacing holes or other divots on turf surfaces.	Projects at Large, Medium, or Small hub airports.

B-7. RELATED PROJECTS

The following projects are not eligible as stand-alone AOS projects; however, references to related projects that may be eligible under a different appendix are provided as applicable. In many cases,

efforts may be included as part of the AOS overall development objective if they are necessary and related work to complete the project and the work meets the requirements in FAA Order 5090.5.

TABLE B-7.1. RELATED PROJECTS

Project Type	When Scope of Work Includes	See Appendix
Access and Service Roads	Internal service and perimeter roads	C, Airfield Infrastructure
	Security-related perimeter service roads under Part 1542	M, Security
Airfield	Airfield drainage or erosion control measures	C, Airfield Infrastructure
	Airfield equipment	
	Obstruction removal and mitigation	
Aprons	Deicing	D, Environmental & Energy
	Electric aircraft infrastructure	J, Pilot Programs
	Fuel farms	L, Revenue Producing
	Wash racks	
Equipment	Friction measuring and foreign object and debris	C, Airfield Infrastructure
	Navigation aids and weather equipment	G, NAVAIDs
Fueling	Snow removal equipment fueling infrastructure in Alaska	E, Equipment & Facilities
	Fuel farms	L, Revenue Producing
Lighting	Obstruction mitigation and removal	C, Airfield Infrastructure
	Airfield lighting	F, Lighting, Signage & Markings
	Approach lighting systems	G, NAVAIDs
	Lighting required by an airport's 1542 Plan	M, Security
Markings and Signage	Markings	F, Lighting, Signage & Markings
	Signage	

Project Type	When Scope of Work Includes	See Appendix
Runways	Engineered Material Arresting System (EMAS)	C, Airfield Infrastructure
	Runway Safety Area (RSA) improvements	
	Runway obstruction survey	K, Planning
	Aeronautical surveys for instrument flight procedures	

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